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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/726,543	12/04/2003	Urs-Peter Studer	32478-199165 RK	7940

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EXAMINER	
NGUYEN, SANG H	

ART UNIT	PAPER NUMBER
2877	

DATE MAILED: 08/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/726,543	STUDER ET AL.	
	Examiner	Art Unit	
	Sang Nguyen	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 5-11* is/are pending in the application.

4a) Of the above claim(s) *4* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3 and 5-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/04/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Species II (claims 1-3 and 5-11 in the reply filed on 05/23/06 is acknowledged.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 12/04/03 has been entered. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Objections

Claim 1 is objected to because of the following informalities:

Claim 1 recites the limitation "they" in line 18. There is insufficient antecedent basis for this limitation in the claim.

.Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

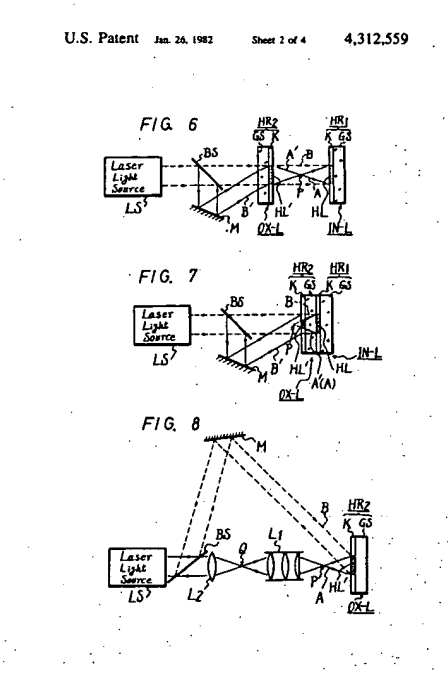
> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

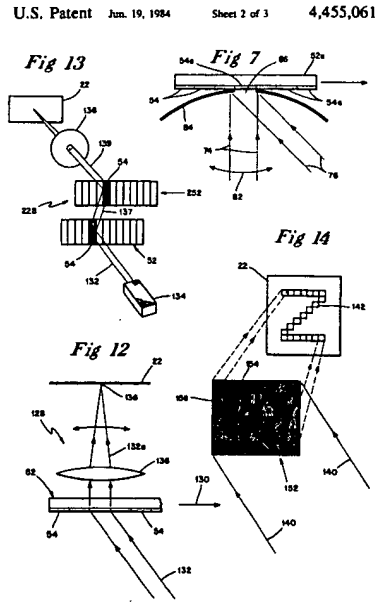
invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 6, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima et al (U.S. Patent No. 4,312,559) in view of Case (U.S. Patent No. 4,455,061).

Regarding claim 1; Kojima et al discloses a holographic optical element, the element comprising:

the holographic optical element (HR2, HR1 of figure 7) having at least two interference patterns (considered to be formed a plurality of interference patterns on hologram record medium r [see col.4 lines 40-50]), wherein each interference pattern (HI of figure 5 and col.4 lines 40-50) of the holographic optical element (HR of figure 5) is created through simultaneous exposure of the holographic optical element (HR of figure 5) to the fan-shaped reference wave front (A',A of figures 6-7) generated by the monochromatic and coherent laser light source (LS of figure 7) and a parallel partial wave front (B', B of figure 7) generated by the same monochromatic and coherent laser light source (LS of figures 6-7) and hitting the holographic optical element (HR2, HR1 of figures 6-7) at a different angle (figures6-7) than the reference wave front (A, A' of figures6-7), wherein the number of parallel partial wave fronts (B, B' of figure 7) used for the exposure of the holographic optical element (HR2, HR1 of figure 7) corresponds to the number of interference patterns (col.1 line 57 to col.2 line 12; col.2 line 63 to col.3 line 14; col.4 line 35 to col.5 line 2). See figures 1-14.





Kojima et al discloses all of features of claimed invention except for the parallel partial wave fronts are virtually extended through the holographic optical element, the parallel partial wave fronts intersect behind the element in a center of a measuring field. However, Case teaches that it is known in the art to provide a holographic optical element (52 of figure 12) having the parallel partial wave fronts (132 of figure 12) are virtually extended through the holographic optical element (52 of figure 12), the parallel partial wave fronts (132 of figure 12) intersect behind the holographic optical element (52 of figure 12) in a center (i.e., scan pot136 of figure 12) of a measuring field (i.e., scan plane and col.12 lines 8-39). See figures 1-15.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the holographic optical element of Kohima et al with the parallel partial wave fronts are virtually extended through the holographic

optical element, the parallel partial wave fronts intersect behind the element in a center of a measuring field as taught by Case for the purpose of improving the inference pattern recorded on the film acts like a diffraction grating.

Regarding claim 6; Kojima et al discloses the at least two interference patterns (156 of figure 14) at least partially overlap one another (figure 14).

Regarding claim 8; Kojima et al discloses all of features of claimed invention except for the holographic optical element is a holographic film plate. However, Case teaches that it is known in the art to provide a holographic optical element (30 of figure 2) is a holographic film plate (32, 34 of figure 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the holographic optical element of Kohima et al with the holographic optical element is a holographic film plate as taught by Case for the purpose of improving the inference pattern recorded on the film acts like a diffraction grating.

Claims 2-3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima et al in view of Case ('061) as applied to claim 1 above, and further in view of Case (U.S. Patent No. 4,547,037).

Regarding claim 2; Kojima et al in view of Case ('061) discloses all of features of claimed invention except for the at least two interference patterns comprises at least three different interference patterns. However, Case ('037) teaches that it is known in the art to provide the at least two interference patterns (12 of figure 2) comprises at least three different interference patterns (figures 2-3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the

holographic optical element of Kohima et al with the at least two interference patterns comprises at least three different interference patterns as taught by Case for the purpose of improving the inference pattern recorded on the film acts like a diffraction grating.

Regarding claim 3; Kojima et al discloses the at least two parallel partial wave fronts (B, B' of figures 5-7) are all located in a single plane (figures 5-7).

Regarding claim 5; Kojima et al in view of Case ('061) discloses all of features of claimed invention except for the holographic optical element includes a plurality of sections, and each section has a respective one of the interference patterns and the sections are spatially separated from another section. However, Case ('037) teaches that it is known in the art to provide the holographic optical element (10 of figure 2) includes a plurality of sections (12 of figure 2), and each section(12 of figure 2) has a respective one of the interference patterns (36, 38 of figure3) and the sections (12 of figure 2) are spatially separated from another section (figures 2-3). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the holographic optical element of Kohima et al with the holographic optical element includes a plurality of sections, and each section has a respective one of the interference patterns and the sections are spatially separated from another section as taught by Case for the purpose of improving the inference pattern recorded on the film acts like a diffraction grating.

Claims 7 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kojima et al in view of Case ('061) as applied to claim 1 above, and further in view of Kaser (U.S. Patent No. 4,955,694).

Regarding claims 7 and 9; Kojima et al in view of Case ('061) discloses a measuring arrangements comprising a transmitting part for generating a laser beam and a receiving part, wherein both parts include a holographic optical element and the holographic optical element of at least the transmitting part comprises the holographic optical element, wherein said arrangement being adapted to be used to measure at least one of the dimension and position an object with the aid of the laser beam, which is deflected so that it sweeps across a specific angular range. However, Kaser teaches that it is known in the art to provide a measuring arrangements (figures 1 and 8) comprising a transmitting part (2 of figure 1) for generating a laser beam (7 of figure 1) and a receiving part (17 of figure 1), wherein both parts (1, 17 of figure 1) include a holographic optical element (11, 19 of figure 1) and the holographic optical element (11 of figure 1) of at least the transmitting part (2 of figure 1) comprises the holographic optical element (11 of figure 1), wherein said arrangement (figures 1 and 8) being adapted to be used to measure at least one of the dimension and position an object (1 of figure 1) with the aid of the laser beam (7, 7_1 of figure 1), which is deflected so that it sweeps across a specific angular range (θ of figures 1 and 8 and col.1 lines 10-18 and col.2 lines 28-31). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the holographic optical element of Kohima et al with a measuring arrangements comprising a transmitting part for generating a

laser beam and a receiving part, wherein both parts include a holographic optical element and the holographic optical element of at least the transmitting part comprises the holographic optical element, wherein said arrangement being adapted to be used to measure at least one of the dimension and position an object with the aid of the laser beam, which is deflected so that it sweeps across a specific angular range as taught by Kaser for the purpose of reducing weight, simple geometry, lower cost, larger aperture relatively to shorter focal length, and minimal lens errors with optimum reconstruction geometry.

Regarding claim 10; Kojima et al in view of Case ('061) discloses all of features of claimed invention except for the object comprises one of a cable, profile, and a pipe. However, Kaser teaches that it is known in the art to provide the object comprises one of a cable, profile, and a pipe (col.2 lines 28-32 and figures 1 and 8). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the holographic optical element of Kohima et al with the object comprises one of a cable, profile, and a pipe as taught by Kaser for the purpose of reducing weight, simple geometry, lower cost, larger aperture relatively to shorter focal length, and minimal lens errors with optimum reconstruction geometry.

Regarding claim 11; Kojima et al in view of Case ('061) discloses all of features of claimed invention except for a device for measuring at least one of the dimension and position of an object, the device comprising: a transmitter part for generating a monochromatic light beam and a receiver part, wherein the transmitter part and the receiver part each include a holographic optical element, wherein the transmitter part

includes means for deflecting the light beam in the transmitter part through an angular region onto the holographic optical element in the transmitter part. However, Kaser teaches that it is known in the art to provide a device (figures 1-8) for measuring at least one of the dimension and position of an object (1 of figure 1), the device comprising: a transmitter part (2 of figure 1) for generating a monochromatic light beam (7, 7_1 of figure 1) and a receiver part (17 of figure 1), wherein the transmitter part and the receiver part (2, 17 of figure 1), each of both parts (2, 17 of figure 1) include a holographic optical element (11, 19 of figure 1), wherein the transmitter part (2 of figure 1) includes means for (8, 9, 10 of figure 1) deflecting the light beam (7 of figure 1) in the transmitter part (2 of figure 1) through an angular region onto the holographic optical element (11 of figure 1) in the transmitter part (2 of figure 1 and col.1 lines 10-18 and col.2 lines 28-31). It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the holographic optical element of Kohima et al with a device for measuring at least one of the dimension and position of an object, the device comprising: a transmitter part for generating a monochromatic light beam and a receiver part, wherein the transmitter part and the receiver part each include a holographic optical element, wherein the transmitter part includes means for deflecting the light beam in the transmitter part through an angular region onto the holographic optical element in the transmitter part as taught by Kaser for the purpose of reducing weight, simple geometry, lower cost, larger aperture relatively to shorter focal length, and minimal lens errors with optimum reconstruction geometry.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Chang (5124815) discloses method for forming holographic optical elements; Farnsworth et al (5121371) discloses optical servo system; Hoebing (5117296) discloses apparatus and synthetic holography; Shih et al (5009502) discloses system of holographic optical element; Cederquist (4930847) discloses multicolor holographic element; Gilbreath-Frandsen et al (4878718) discloses method for holographic correction of beams of coherent light; Bjorklund et al (4432597) discloses transmissive holographic optical element; or Chang (4245882) discloses doubly modulated on-axis thick hologram optical element.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang Nguyen whose telephone number is (571) 272-2425. The examiner can normally be reached on 9:30 am to 7:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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July 30, 2006

Sang Nguyen
Patent Examiner
Art Unit 2877